DOCUMENT RESUME

ED 088 457 IR 000 288

AUTHOR	Vickers, Mary Lynn
TITLE	Regional Reference Survey Report.
INSTITUTION	Southern Connecticut Library Council, North Branford.
PUB DATE	Jul 73
NOTE	41p.
EDRS PRICE	MF-$0.75 HC-$1.85
DESCRIPTORS	Facility Utilization Research; *Library Reference Services; Library Research; *Library Surveys; *Public Libraries; *Statistical Surveys; *Use Studies
IDENTIFIERS	Connecticut

ABSTRACT

This reference use survey conducted by the Reference Committee of the Southern Connecticut Council in 1972 was undertaken to determine the present pattern of reference use and to assist in future planning. Some of the characteristics of the 18 public libraries participating in the survey include a media per capita expenditure of $4.65 in 1971, a 2.4 volume per capita average, an average per capita circulation of 6.1 in 1971, an average main building age of over 50 years and an average of 58 open hours per week. The major findings were that non-resident use of reference services ranged from 1.4 to 49.1%, that students and teachers comprise 50.8% of the reference clientele, that in-person reference use was 76% and telephone inquiries 23% of the total and that Monday afternoon was the busiest time of the week. The majority of inquiries were subject searches and ready reference questions with the most popular areas being history and biography. The card catalog and the non-fiction circulating collection were found to be the most heavily used materials. Based on these findings, the report recommended the establishment of a back-up reference service during the busiest hours and compensation for those libraries serving a large proportion of non-users. (JG)

ED 088457

THE SOUTHERN CONNECTICUT LIBRARY COUNCIL

P.O. Box 65
North Branford, Conn 06471

REGIONAL REFERENCE SURVEY REPORT

Prepared by:
Mary Lynn Vickers
July, 1973

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

IR000888

REGIONAL REFERENCE SURVEY REPORT

OUTLINE

I. Introduction
- Historical and Legal Basis of the Survey
- Purpose of the Survey
- Public Library Overview

II. Summary
- Traffic Patterns
- Inquiry Characteristics
- Material Characteristics

III. Method of Survey
- Worksheet Design
- Selection of Survey Weeks
- Description of the Survey Worksheet
- Keypunching
- Preparation of the Cross-Tabulation Tables
- Survey Costs

IV. Results
- Variation Among the Four Survey Weeks
- Traffic Patterns
- Inquiry Characteristics
- Material Characteristics
- Patron Characteristics

V. Conclusions and Recommendations
- Unsatisfied Inquiries
- Existing Regional Patterns of Use
- Back-Up Reference Service

VI. Figures and Tables
(in the order mentioned in the text)

REGIONAL REFERENCE SURVEY REPORT

I. INTRODUCTION

Historical and Legal Basis of the Survey

This is a report of the Reference Use Survey conducted by the Reference Committee of the Southern Connecticut Library Council in 1972. The Reference Committee was appointed in September 1971 with the following members: Mr. Robert Balay, Chairman (Yale University), Mrs. Helen Ahearn (Derby Public Library), Miss Doris Buchheit (Plumb Memorial, Shelton), Mr. Jack Stoddard (Woodbridge Public), Mrs. Betty Workman (Hopkins Grammar School). Representatives from Quinnipiac College, Southern Connecticut State College, and the University of New Haven were also present at committee meetings as invited guests.

In February 1972 the Reference Committee reported to the Council the need to gather facts about reference service and uses in the region. A method for doing this using a survey worksheet was described at the Council meeting, and a motion was made and passed by the members that this method be followed by the Reference Committee. The Committee was asked to formulate a worksheet and submit it to Council members for their approval, and then to go ahead with the fact-gathering process.

Purpose of the Survey

This study was undertaken by the Reference Committee at the request of the Council in order to determine the present pattern of reference use in the region, and to assist the Council in planning improved reference services and resources. Discovering how existing services are used would, it was believed, aid in the definition of expanded reference services needed in the south central region of Connecticut.

Some of the main points to be determined by the survey were:

- where users of a particular town library reside,
- where students who use reference services of the public library attend school,
- in-person vs. telephone reference use patterns,
- what are the busiest times of the day and week,
- the kinds of inquiries, and their subjects,
- the materials consulted in response to inquiries.

Public Library Overview

The median per capita expenditure of the 18 public libraries participating in the Council survey was $4.65 in 1971. Seven of the libraries did achieve the recommended minimum goal of the Standards Committee of CLA of $5.00 per capita. Support of the

libraries in the survey ranged from $2.89 to $9.77 per capita. There were 2.4 volumes per capita, on the average, in the libraries surveyed.

Among the libraries surveyed, the average circulation per capita in 1971 was 6.1, so it is apparent that libraries are used despite the inadequacies that exist.

One of the most obvious deficiencies of the public libraries participating in the survey is in their physical housing; the average age of the main library building in the 18 public libraries is over 50 years, with one main building aged 83 years. Seven of these libraries have definite plans for construction, with a total projected cost over $13 million. The construction is, of course, contingent upon receipt of the funds.

The hours the libraries surveyed are open per week range from 27 to 69, with an average of 58. Hours of reference service coincide with the hours the library is open in all cases except New Haven where there is no reference service available 22% of the time due to local personnel and budget shortages.

II. SUMMARY

Traffic Patterns

Each library recorded some non-resident use of its reference service, ranging from 1.4% to 49.1% of all its reference.

Students from elementary school through university level and teachers account for 50.8% of the region's reference activity.

In-person reference use amounted to 76% of the total, and telephone inquiries were 23% of the total.

The busiest time of the week is Monday afternoon between 2 and 5 PM; study of the busy periods reveals that nearly 50% of the reference activity in the region could be backed-up by maintaining a central reference service for 23 hours each week.

Inquiry Characteristics

Subject searches and ready reference questions composed a majority of the inquiries.

History/Biography was the most popular subject for inquiry in the region.

Material Characteristics

The card catalog and the non-fiction circulating collection were the two most heavily used materials in the region.

III. METHOD OF SURVEY

Worksheet Design

After the Council approved the survey in February 1972, a preliminary survey worksheet was submitted to Council members early in March for their comments and suggestions. A revised worksheet was distributed at a Council meeting late in March for additional comments and approval.

The Council's method of survey was based on a technique that had been used at the Sterling Memorial Library, Yale University in 1970-71.

A Training Session for library staffs in the use of the survey worksheet was held in the first week of April, and a two-day Trial Run was conducted April 10 and 11. Comments from the Trial Run were used to revise the worksheet.

The major result of the Trial Run was the exclusion of trivial direction and information questions (i.e. library hours, location of the water fountain, local library practices) from the survey when the impracticality of recording the large numbers of trivial questions was clearly shown.

Selection of Survey Weeks

Four separate weeks in 1972 were arbitrarily selected by Council members for surveying: May 8-14, July 31-August 6, October 16-22, and November 13-19. No pretentions are made that this represents a scientific sample of times for conducting the survey. Time constraints and the voluntary participation of library staffs in the survey dictated the weeks selected.

Variations were noted among the results of the survey weeks, mainly in the differences observed between the July survey week and the other three non-vacation survey weeks. These are discussed in Section IV.

Although the weeks of the survey were selected somewhat arbitrarily, when taken together the four weeks reflect the pattern of a typical year; 1/4 of the year is vacation, and 1/4 of our survey sample was during summer vacation. Similarly, 3/4 of the year schools are in session, and school was in session during 3 of the 4 survey weeks.

Description of the Survey Worksheet

A copy of the survey worksheet used by the Council is shown in Figure 1A. A survey worksheet is filled out by a library staff member for each inquiry. The only questions that need to be asked the library patron in addition to the usual reference interaction

are A. TOWN OF RESIDENCE and B. PATRON AFFILIATION. The remainder of the worksheet can be completed at the conclusion of the inquiry.

The worksheet is designed to serve as a keypunching sheet, so the punched card columns are indicated for each category, and the code to be punched in each field is listed at the left-hand side of each item. Library staff members were instructed to circle only one item in each category; keypunchers were instructed to punch only the first item circled in a case of multiple circlings. If no item was circled, the keypunchers were instructed to punch zeros in the appropriate columns.

LOCATION CODE, at the top of the worksheet, was used to indicate where the sheet was being completed; the eighteen public libraries participating in the survey each had a two-digit code to be punched in Columns 1-2. The non-public libraries in schools and colleges each had a single digit to be punched in Column 3. Location codes are listed in Figure 1B.

The data collected in the public libraries was kept separate from that collected in the schools and colleges, and processed separately, since in some of the academic institutions only a count of the reference questions during the survey weeks was available. Therefore, this is primarily a study of reference use in the 18 public libraries of the Council, with the data from the academic libraries furnishing information on numbers of inquiries received to be added to the total of the region.

A. PATRON's TOWN OF RESIDENCE: All towns in the Council membership are listed.

B. PATRON AFFILIATION: The purpose of this category is to identify the use of reference service by students, and to determine where the student attends school. '15' is used when the teacher is making a request in the role of a teacher; a personal inquiry would be coded as '17' with All Other Adults.

C. MODE OF INQUIRY: Did the patron contact the library in-person, by telephone or by mail.

D. INQUIRY TYPE: The kinds of inquiries received are classed in this category; as mentioned above, a class of 'Information & Directions' was deleted after a trial run showed the tremendous volume of these trivial questions would overwhelm the method and interfere with collecting facts about the non-trivial questions.

1. Instructions: How to use the various bibliographic tools, e.g. indexes, Reader's Guide and so on, including explanations of abbreviations, format, and symbols.

2. Card Catalog: Help in using the catalog, explaining its use or directing persons to it.

3. Ready Reference: Queries for specific facts, involving a quick look-up, e.g. addresses, statistics, dates, quotations.

4. Interlibrary Loan: The patron is requesting that the library borrow a specific book from another library for him. No searching by the library staff member was involved in reaching this stage--the patron did it and is asking directly for ILL. If a lot of preliminary work by the library staff member was needed before the ILL stage was reached, the type of inquiry might then be '02' for Card Catalog. In both cases the result in category J. would be '6'. Since the purpose of this survey was not to evaluate the working of interlibrary loan, there was no follow-up to find out whether or not the requested item was actually ever received.

5. Subject Search: A more involved, lengthy consulting of encyclopedias, texts, and other sources.

6. Reader's Advisory: The customer wants a few suggestions on what to read.

7. Non-legitimate Inquiries: Local library policy dictates what types these are. Generally they would involve interpretative responses to legal, medical, or consumer questions, or school assignments. For example, a patron seeking information about abortion referral would receive a wide range of replies depending upon which library was queried, and the existing local policy of that library.

8. AV-Film Info: Questions about films available, how to check it out, equipment rental and so on.

E. SUBJECT OF INQUIRY: The most reasonable and workable categories have been listed, based upon the suggestions from the trial run. The best choice had to be selected in cases where the inquiry is not clearly one subject. Code '15', None, is the response used for inquiries involving instructions (D. '1') or the card catalog (D. '2').

F. MATERIAL CONSULTED: This category is intended to show which materials were used in answering the question, or materials requested through ILL. These choices were based on the comments received from the trial run. No attempt was made to accommodate multiple entries in this category, even though more than one type of material is often consulted in answering a reference inquiry; the material which was the most helpful, or actually furnished the answer, was the one to be designated in this category.

G. DAY OF THE WEEK and H. TIME OF DAY: Self-explanatory.

I. DURATION: The amount of time spent on any inquiry will be shown

in this category; approximations were naturally necessary since the time spent on some searches is not consecutive.

J. RESULT OF INQUIRY: The outcome of each reference inquiry in the judgement of the library staff member.

1. Satisfied: From the library's point of view, the patron got the information sought.

2. Partly Satisfied: This would be the case where the patron asks for material that doesn't really exist, or doesn't have a clear idea of what is wanted but will know it when he sees it.

3. Patron Left Too Soon: The patron may not have the time to wait while a search is being conducted. The customer may just give up and leave without the sought-for information.

4. NOS, Owned by Library: The requested material is owned, but is checked out, or not on the shelf for some reason.

5. Not Owned, Not ILL'd: The library doesn't own the asked-for material, and no interlibrary loan is initiated to borrow it from another library.

6. Not Owned, ILL'd: In this case, an interlibrary loan WAS initiated to borrow the asked-for item.

7. Source to Consult Unknown: The standard, usual possibilities have been tried with no success, and the next step to take in finding the answer is unknown.

8. Referred to Other Agency: This other agency might be a library, or other community institution.

K. IF INTERLIBRARY LOAN IS REQUESTED, WOULD THE PATRON BE WILLING TO PAY $1.00 FOR THE SERVICE?

The purpose of this question was to find out how the patrons react to paying for ILL service. This question would only be asked when the Inquiry Type (D.) is ILL ('4'), or the Result of Inquiry (J.) is Not Owned, ILL'd ('6').

If Interlibrary Loan was not involved, the library staff members were instructed to leave the category blank, and the keypunchers were instructed to punch a zero '0' in Column 70.

Keypunching

At the conclusion of each survey week the completed worksheets were returned to the Council office; a cursory check of the survey sheets was done to make sure location codes were indicated.

Explicit written instructions were prepared for the keypunchers at Keypunch Services, Inc. of Waterbury. Keypunch Services picked up the survey worksheets from the Council office and delivered the completed punched cards within a week.

Card design is illustrated in Figure 2.

Preparation of the Tables

The data on punched cards was analyzed using the Statistical Package for the Social Sciences (SPSS) at the Yale Computer Center. The 'FASTABS' section of SPSS, which generates cross-tabulation tables, was used.

FASTABS enables the computer to create tables showing the occurrence of one variable in relation to another variable and even to a third variable. The values listed in each cell of the tables were (1) straight count, (2) percent for each cell by row, (3) percent for each cell by column, and (4) percent of the total for each cell.

Samples of the tables generated by the computer are shown in Figure 3. Totals and percents of each row and column are also shown along the side and bottom of the tables.

The tables and graphs in this report are based directly on those prepared by the computer. FASTABS prepared the following 21 tables using the cumulated data from the four weeks of surveying:

Location of the library (cols. 1-2) vs. Patron's Town of Residence
" " vs. Patron Affiliation
" " vs. Mode of Inquiry
" " vs. Inquiry Type
" " vs. Subject of Inquiry
" " vs. Material Consulted
" " vs. Day of the Week
" " vs. Time of Day
" " vs. Duration
" " vs. Result of Inquiry

Inquiry Type vs. Patron Affiliation
" " vs. Subject of Inquiry
" " vs. Material Consulted
" " vs. Result of Inquiry

Subject of Inquiry vs. Patron Affiliation
" " vs. Material Consulted
" " vs. Duration
" " vs. Result of Inquiry

Material Consulted vs. Result of Inquiry

Day of Week vs. Time of Day

Location of the Library vs. Patron's Town of Residence vs. Mode of Inquiry

The cumulated data from the four survey weeks are stored on a magnetic tape at the Yale Computer Center. It is possible to manually sort out the punched cards of any particular week if further analysis of an individual week is desired. The punched cards are stored at the Council office.

Separate computer runs were made as the cards from each survey week were received; tables as listed on page 7 were prepared with the exception of the last comparison involving three variables. The tables for each week averaged 102 pages of print-out.

When the four weeks cumulated data were processed with FASTABS, 99 pages of cross-tabulation tables were printed. In the process of furnishing each public library with their individual activity summary for the entire survey, the cumulated data were used to prepare the following tables, which generated 84 pages of print-out:

Time of Day vs. Day of Week vs. Location of the Library (Cols. 1-2)

Patron's Town of Residence vs. Day of Week vs. Location of the Library

Patron's Town of Residence vs. Time of Day vs. Location of the Library

Survey Costs

The direct cost of this survey of reference use was made up of three items:

Computer Time at Yale Computer Center	$119.10
20,000 Survey Worksheets	118.65
Keypunching Service	373.56
	$611.31

IV. RESULTS

Variation Among the Four Survey Weeks

Most of the variation is found when comparing the results of the July survey week, during summer vacation, with the results of the other three weeks of survey which were conducted while the school year was in progress.

A. The amount of reference activity declined by nearly two-thirds during the summer; 1,290 inquiries were received during the July survey week, while over 3,400 were recorded on the average in each of the other three survey weeks.

B. The percentage of student use declined in the summer, while the percentage of All Other Adults increased by almost 50% in the summer.

C. During the third week of the survey, in October, the Derby Public Library was closed due to construction. By the time of the fourth survey week in November the library was open again and two consecutive weeks of surveying were conducted at Derby: the week before the designated survey week, and the fourth week when all other libraries were surveying.

It is interesting to notice where the residents of Derby, temporarily without reference service during October, went to satisfy their information needs: Shelton (60%), Ansonia (25%), and New Haven (15%). This is derived from the results of the third survey week in October.

D. The percentage of in-person reference use declined slightly in the summer survey week, with a corresponding rise in the telephone reference use as compared to the other three weeks.

E. The Subjects of Inquiries during the July week showed fewer social science, science/technology, and history/biography than in the rest of the year; the July week also showed more sports, crafts, and fiction collection inquiries than in the other survey weeks.

F. The variation in the Types of Inquiries received during the survey weeks shows subject searches declining by about one-third, and a rise in the reader's advisory service of about 40% during the July survey week.

G. Variations in the materials consulted in each of the survey weeks show a rise of nearly 50% in Directory usage during the summer, with a similar rise in the use of the Circulating Fiction Collection for reference during the summer.

Use of periodicals, newspapers, and their related indexes declined by 25% during the summer.

H. The use of reference service on each day of the week showed little variation other than the predictable low volume of Saturday activity during the summer when many libraries are closed on Saturday.

I. The July survey week showed a different pattern of reference activity during the day; the inquiries were more evenly distributed between 9 AM and 5 PM and did not show the tremendous surge in

activity between 2 and 5 PM that was recorded for the other three survey weeks, when school was in session.

J. When comparing the time of day with the day of the week to determine when the greatest amount of reference activity occurs, some differences were observed:

Week 1	Monday between 2-5 PM	(May)
Week 2	Monday between 9 AM-12 NOON	(July)
Week 3	Wednesday between 2-5 PM	(October)
Week 4	Wednesday between 2-5 PM	(November)

Apparently when school is in session the heaviest use of the reference services occurs in the afternoon when school is over for the day. One might surmise that this increased use is due to an influx of students, but there are no definite facts to support this conclusion.

Traffic Patterns

A. Amount of Reference Activity

The public libraries handled nearly 9,000 inquiries during the four weeks of this survey. Table 1 gives a detailed summary of the reference activity.

The total amount of reference use of each library by both town residents and non-residents is related to each 10,000 of town population in Table 2.

B. Resident and Non-Resident Use of Reference Services

Each town's library recorded some inquiries by patrons not residing in that town, ranging from 1.4% up to 49.1% non-resident use as shown in Table 3.

One of the most striking patterns of use observed is among the Valley libraries: Ansonia, Derby, Seymour, and Shelton. Derby had an unexpectedly high amount of non-resident use. When the towns of residence of the users of the Derby Library are examined it appears that neighboring towns depend frequently upon the Derby Library for their information.

The telephone reference pattern is especially striking in that two-thirds of the service rendered over the telephone at the Derby Library is to non-residents of the town of Derby. Table 4 shows these facts in detail.

Since the Valley libraries have a reciprocal borrowing arrangement for circulating materials, an exchange of reference services is not at all unexpected.

The apparent centrality of the Derby Library is, however, not easily explained. It is more accessible via the main thoroughfares of the region than any of the other three Valley libraries, but this does not explain the high amount of non-resident telephone usage. The fact that Derby is open more hours per week than any of the other Valley libraries may have some bearing on the composition of their reference activity. Looking at the reciprocal borrowing pattern of the Valley towns reveals Derby doing the greatest amount of lending to residents of the other three towns, and Derby residents going to other libraries for books the least often.

Generally the in-person reference inquiries were more likely to come from residents of the town in which the library was located than were the telephone reference inquiries. For example, service to non-residents at the Hamden Library was 9.1% of the in-person total and 15.3% of the telephone total; similarly, at the NHFPL, reference service to non-residents visiting the library in person was 16.3% of the total in-person reference activity and telephone reference service to non-residents was 39.6% of total telephone reference service.

The towns of residence of the users of in-person and telephone reference services in the public libraries are summarized in Tables 5A and 5B.

C. Time of Highest Reference Activity

The busiest times for reference activity based on the percent activity as a part of the total are listed in decreasing order in Table 6. Cumulating the percentages reveals that nearly 50% of the reference activity in the region would be backed-up by staffing a central reference service for the 23 most active hours each week.

The public libraries of the region are open an average of 52 hours per week, so a back-up service during the 23 most active hours would make reference help available on the average 44% of the time that the libraries are open.

Of the first six most active times in the week, 5 are the weekday afternoons between 2 and 5 PM. This could indicate heavy use of the reference services in the region by students, and it would be possible to verify this speculation by comparing affiliations with times.

D. Affiliation of Reference Service Patrons

Students from the elementary schools through the colleges and universities and teachers compose just over half (50.8%) of the reference activity in the public libraries in the survey. Business and Industry accounted for 6.9% of the total activity and All Other Adults were 40.2% of the total. Figure 4 shows the affiliations in greater detail.

E. Mode of Inquiry

In the region's public libraries, an average of 76% of the reference activity was transacted in person, with a range among the libraries from 38.5% to 88.8%.

The telephone was used by reference patrons in an average of 23% of the inquiries, ranging from 11% to over 60% among the libraries in the survey.

There seems to be no apparent correlation between library size or population or other variable and the proportion of in-person and telephone reference use. See Table 7.

F. Reference Activity Levels During the Week

The cumulated four weeks' data show the level of reference inquiries declines steadily from Monday through Saturday. Nearly one-quarter of the total inquiries received in the public libraries in a week are received on Monday. See Figure 5.

G. Reference Activity Levels During the Day

The afternoon hours between 2 and 5 PM are the busiest of the day (with the exception noted in the summer, discussed in Section I. of the Variations); 38.5% of the inquiries were received during these afternoon hours. The morning hours of 9 AM- 12 NOON are the second most active time of the day, on the average, with 22.6% of the inquiries received. See Figure 6.

Inquiry Characteristics

A. Types of Inquiries

The majority of the reference inquiries at the public libraries during the survey were either Ready Reference (26.8%) or Subject Search (31.3%).

The variation in the kinds of questions received in the summer was discussed in Section F. of the Variations. See Figure 7.

B. Subject of Inquiry

History/Biography was the most popular subject for inquiries to public libraries during the survey. The subjects of the inquiries are shown in greater detail in Figure 8.

C. Result of Inquiry

Three-quarters of the reference inquiries were judged to be 'satisfied' by the library staff responder; another 12.5% were judged to be 'partly satisfied.' The obvious drawback to this section of the survey is that we have no information on how the

library patron evaluated the service received, and whether the response to the inquiry was correct. Patron satisfaction and accuracy of information received at the reference desk are not synonymous. See Figure 9 for complete results of this section.

D. Types of Inquiries Received from Patron Groups

Instructional questions are asked mainly by High School and College students, and All Other Adults. The same is true of inquiries regarding the Card Catalog.

Ready Reference inquiries are received twice as often from All Other Adults than from High School and College students. Business and Industry and the Elementary School students generate Ready Reference inquiries in about equal numbers.

The greatest use of the public libraries by Teachers is for Interlibrary Loan and AV/Film Information.

Elementary School students use the public library reference services for Subject Searches and Reader's Advisory. See Figure 10 for a complete summary.

E. Subjects of the Various Types of Inquiries

The subjects of Ready Reference inquiries were General (27.4%), History and Biography (10.2%), Social Science (9.9%), and Business and Law (9.9%).

Subject Searches were initiated in History and Biography (19.2%), Science and Technology (15.2%), Social Science (10.9%), and Fine Arts and Literature with about 9% each.

The most frequently occurring combinations of Inquiry Type and Subject in the public libraries surveyed, as a percent of the total inquiries, are:

- Ready Reference on a General topic (7.3%)
- Subject Search in History/Biography (6.0%)
- Subject Search in Science/Technology (4.7%)
- Reader's Advisory in the Fiction Collection (4.3%)
- Subject Search in Social Science (3.4%)

F. Results of the Types of Inquiries

The patron asking an Instructional question had the greatest likelihood of being satisfied, with Reader's Advisory and Ready Reference the next highest on the scale of satisfaction as judged by the library staff member.

Subject Searches and Card Catalog inquiries have a somewhat lower level of satisfaction. The over-all "satisfaction" level

of 75.3% of the inquiries makes the small differences among the Types of Inquiries relatively unimportant.

G. Subject of Inquiries Received from Patron Groups

Elementary School students asked Science and Technology, History and Biography, and Geography and Travel questions, which is not too surprising when the subjects of the curriculum in Grades 1-8 are examined.

The High School and College students asked a high proportion of the Social Science and Literature subject questions. The pattern for Business and Industry showed they asked primarily Business and General subject questions. See Figure 11 for more detail.

H. Duration of Inquiries

More than two-thirds of the reference inquiries could be answered with less than 5 minutes of searching.

Inquiries taking more than 11 minutes to be completed were 7.3% of the total. See Figure 12.

I. Duration of Various Subject Inquiries

Since more than two-thirds of the inquiries were completed in less than 5 minutes, a look at the Subjects of the inquiries taking more than 5 minutes of searching shows the following:

- 15.2% of the **6-10 minute inquiries** were History and Biography, 12.2% of the 6-10 inquiries were Literature.
- Social Science and Science and Technology were each 9.8% of the 6-10 minute inquiries.
- Inquiries taking 11-30 minutes to complete were composed of 16.1% History and Biography, 13.7% Science and Technology, 11.2% Social Science, and 9.5% Literature.

J. Comparative Results of Subjects of Inquiries

There is no major difference among the Results of Various Subject inquiries.

Business and Law inquiries were referred to other agencies in 4.1% of the cases, which is a higher level of referrals than any of the other Subjects.

Numerically, Social Science inquiries were referred the most (24 times).

Material Characteristics

A. Materials Consulted

The Card Catalog (25.3%) and the Non-Fiction Circulating collection (22.8%) were the most heavily used materials in the public libraries surveyed.

Since multiple entries were not allowable in this category, it is possible that the picture would be somewhat different if the subsequent materials consulted were known.

Figure 13 summarizes all the Materials Consulted.

B. Materials Consulted in Response to Types of Inquiry

Instruction questions involved consultation of the Card Catalog (22.8%) and None (26.6%).

Ready Reference inquiries caused consultation with General Reference Materials (27%), Directories (19.7%), and the Non-Fiction Circulating Collection (12.3%).

Subject Searches caused use of the Non-Fiction Circulating Collection (39.1%), Card Catalog (22%), and General Reference Materials (13.3%).

The most frequent combination of Inquiry Type and Materials Consulted were:

- A Subject Search in the Non-Fiction Circulation Collection (12.2%),
- Consultation of the Card Catalog in response to an instruction inquiry.

This coincides with the result that the Card Catalog and the Non-Fiction Circulating Collection are the two most heavily used materials in the public libraries surveyed.

Patron Characteristics

A. Patron Willingness to Pay for Interlibrary Loan Transactions

According to the Results of Inquiries in this survey, Interlibrary Loan amounted to less than 1% of the activity in the public libraries. The small amount of this activity makes it a matter of relatively low importance at this time to find out whether those 85 Interlibrary Loan patrons were indeed willing to pay for the service they requested.

V. CONCLUSIONS AND RECOMMENDATIONS

Unsatisfied Inquiries

During the four weeks of the survey there were a total of 1,033 reference inquiries that were not satisfied for one or another of the reasons listed on the survey worksheet.

If we consider these four weeks of surveying during 1972 to be a rough microcosm of what a whole year of surveying would reveal (i.e. one-quarter of the time was vacation, and three-quarters of the survey time school was in regular session as it is for three-quarters of the year), the number of unsatisfied reference inquiries can be roughly extrapolated to 13,500 each year in the region.

Existing Regional Patterns of Use

As discussed in the Results section on Traffic Patterns, the Derby Public Library is apparently used as a resource of the whole Valley region. Neighboring towns depend frequently upon the Derby Library for their information needs. Table 4 shows the extent of the regional use.

The New Haven Free Public Library received in-person reference inquiries from residents of every town in the south central region during the survey. Telephone reference inquiries were received from all towns in the region except Ansonia, Derby, and Shelton; these towns have their own traffic pattern for telephone reference as noted earlier. Non-resident use of the NHFPL by residents of other towns in the region amounted to 24.2% of the total use of NHFPL, and a definite tendency of south central area residents to turn to the New Haven library is shown.

Back-Up Reference Service

This survey determined that nearly half of the reference inquiries in the region occur during 23 hours of the week. These busiest hours have been defined, and it is possible to construct a schedule when reference back-up service would be most helpful to librarians around the region (Table 6).

This report recommends the establishment of a back-up reference service during the busiest times of reference activity in the region.

Alternatively, a method of compensation for those libraries rendering what amounts to regional service must be designed and put into practice to alleviate the rendering of essential local tax-supported services to persons residing outside the local tax base.

VI. Figures and Tables

(in the order mentioned in the text)

Figure 1A

5-3-72

SURVEY WORKSHEET

LOCATION CODE: Columns 1-2_____; Column 3_____.

A. PATRON'S TOWN OF RESIDENCE (Columns 4-5)

01 Ansonia
02 Branford
03 Cheshire
04 Derby
05 E. Haven
06 Guilford
07 Hamden
08 Madison
09 Milford
10 New Haven
11 No. Brnfrd
12 No. Haven
13 Orange
14 Seymour
15 Shelton
16 W'ngford
17 W. Haven
18 W'Bridge
19 Other_____ (Specify)

B. PATRON AFFILIATION (Columns 6-7)

01 Elementary student Grades 1-8
02 Secondary Grades 9-12 Specify School_____
03 Albertus Magnus
04 Quinnipiac Undergrad
05 Quinnipiac Grad Stu
06 South Central CC
07 SCSC Undergrad
08 SCSC Graduate Stu
09 UNH Undergrad
10 UNH Grad Stu
11 Yale Undergrad
12 Yale Grad Stu
13 Paier Art School
14 Other(Specify)_____
15 Teacher at_____
16 Business/Industry
17 All Other Adults

C. MODE OF INQUIRY (Column 8)

1 In-person
2 Telephone
3 Mail

D. INQUIRY TYPE (Column 9)

1 Instructions
2 Card Catalog
3 Ready Reference
4 ILL (See K.)
5 Subject Search
6 Rdr's Advisory
7 Non-legit
8 AV-film info

E. SUBJECT OF INQUIRY (Columns 10-11)

01 Gen'l(Encycs,Periodicals, Bibliogs)
02 Psychology & Medicine
03 Religion/Philosophy/Mythology
04 Social Science
05 Philology/Languages
06 Business & Law
07 Science/Technology
08 Fine Arts
09 Literature
10 Sports
11 History/Biography
12 Home Ec/Crafts/Cooking
13 Geography/Travel
14 Fiction Collection
15 None

F. MATERIAL CONSULTED (Columns 12-13)

01 Card Catalog
02 Gen'l Reference (Encycs, Dictionary)
03 Atlases / Maps
04 Directories
05 Bibliographies / Indexes
06 Vertical File Pamphlets
07 Periodicals & Indexes to
08 Newspapers & Indexes to
09 Current Period/Nwspapers (6 months)
10 Fiction - Circulating Collection
11 Non-fiction - Circulating Collctn
12 Picture Collection
13 AV Material - Films
14 Reserve Room/Materials
15 None

G. DAY OF WEEK (Column 14)

1 Monday
2 Tuesday
3 Wdsday
4 Thrsday
5 Friday
6 Strday
7 Sunday

H. TIME (Col 15)

1 8-9 AM
2 9-12 AM
3 12-2 PM
4 2-5 PM
5 5-7 PM
6 7-9 PM
7 9-10:30 PM

I. DURATION (Column 16)

1 Negligible
2 1-2 min
3 3-5 min
4 6-10 min
5 11-30 min
6 30-60 min
7 over 60 min

J. RESULT OF INQUIRY (Column 17)

1 Satisfies
2 Partly Satisfied
3 Patron left too soon
4 NOS, owned by Library
5 Not owned, Not ILL'd
6 Not owned, ILL'd (See K)
7 Source to consult Unknown
8 Referred to other Agency(Specify)_____

K. IF INTERLIBRARY LOAN IS REQUESTED,

WOULD PATRON BE WILLING TO PAY $1.00 FOR SERVICE? 1 YES; 2 NO .

LOCATION CODES

PUBLIC LIBRARY

(Columns 1-2)

01 Ansonia
02 Branford
03 Cheshire
04 Derby
05 East Haven
06 Guilford
07 Hamden
08 Madison
09 Milford
10 New Haven
11 North Branford
12 North Haven
13 Orange
14 Seymour
15 Shelton
16 Wallingford
17 West Haven
18 Woodbridge
19 Not applicable (use Col. 3)

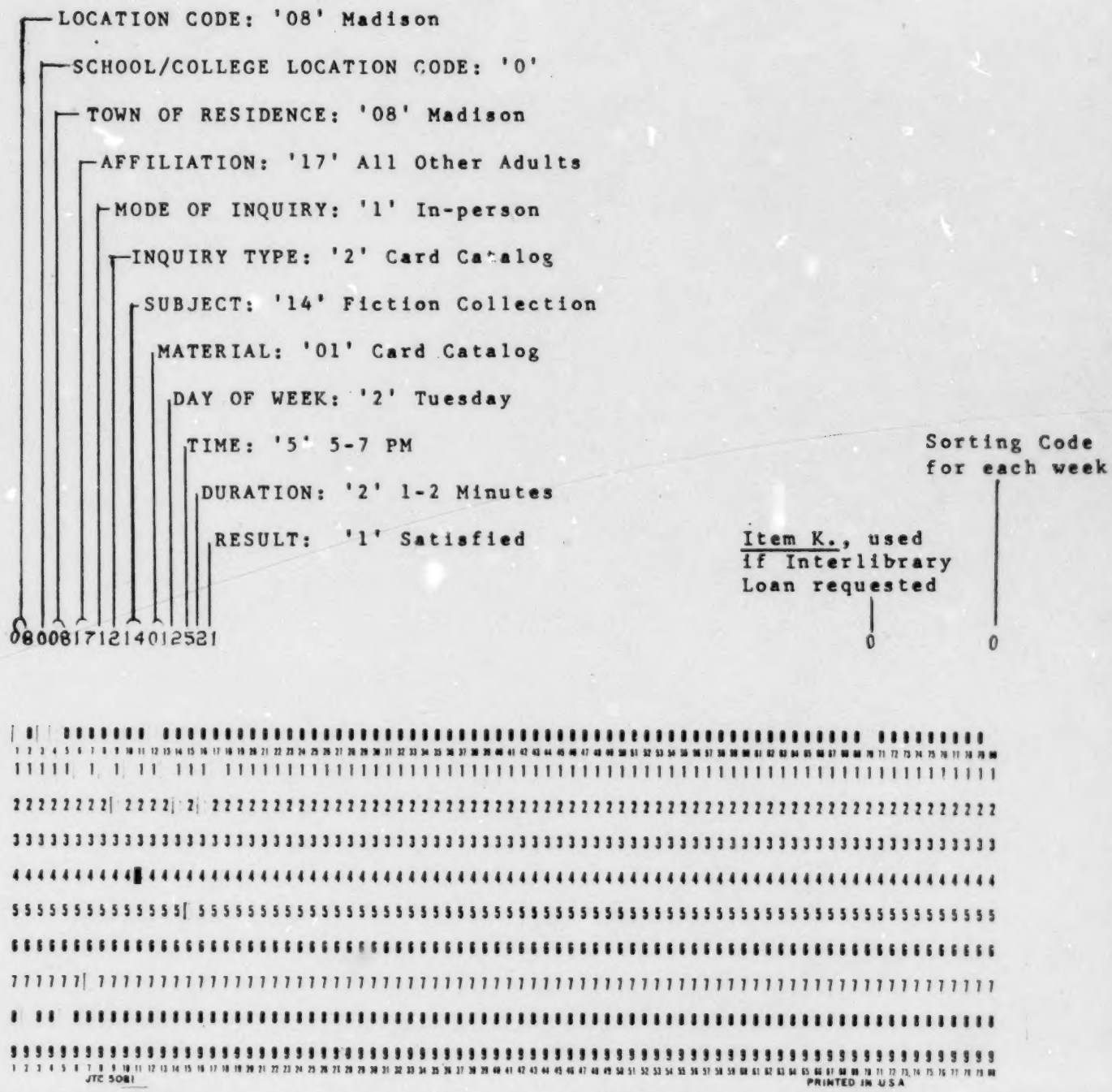
SCHOOLS/INSTITUTIONS

(Column 3)

1 Albertus Magnus
2 Congregation Mishkan Israel
3 Hopkins Grammar School
4 Milford Academy
5 Quinnipiac College
6 Southern Connecticut State College
7 University of New Haven
8 Yale University
9 Not applicable (use Cols. 1-2)

Figure 2

SAMPLE PUNCHED CARD



FILE AUXAML (CREATION DATE = 01/30/73)

* * * * * * * * * * * * * * * * * * * CROSSTABULATION OF LOCPUB BY TIME * * * * * * * * * * * * * * * * * * * PAGE 1 OF 3

LOCPUB	TIME	0	1	2	3	4	5	6	7	ROW TOTAL
0	COUNT	7	5	67	93	156	28	56	16	428
	ROW PCT	1.6	1.2	15.7	21.7	36.4	6.5	13.1	3.7	4.5
	COL PCT	7.1	9.2	3.1	5.5	4.3	3.0	6.1	94.1	
	TOT PCT	0.1	0.1	0.7	1.0	1.7	0.3	0.6	0.2	
1	COUNT	3	1	35	28	40	12	11	0	130
	ROW PCT	2.3	0.8	26.9	21.5	30.8	9.2	8.5	0.0	1.4
	COL PCT	3.0	1.8	1.6	1.7	1.1	1.3	1.2	0.0	
	TOT PCT	0.0	0.0	0.4	0.3	0.4	0.1	0.1	0.0	
2	COUNT	3	2	100	50	103	35	32	0	339
	ROW PCT	0.9	0.6	31.9	16.5	30.4	10.3	9.4	0.0	3.6
	COL PCT	3.0	7.7	5.1	3.3	2.8	3.8	3.5	0.0	
	TOT PCT	0.0	0.0	1.1	0.6	1.1	0.4	0.3	0.0	
3	COUNT	12	0	96	50	188	34	50	0	432
	ROW PCT	2.8	0.0	22.7	11.6	43.5	7.9	11.6	0.0	4.6
	COL PCT	12.1	0.0	4.6	3.0	5.2	3.7	5.4	0.0	
	TOT PCT	0.1	0.0	1.0	0.5	2.0	0.4	0.5	0.0	
4	COUNT	1	0	25	21	26	20	17	0	110
	ROW PCT	0.9	0.0	22.7	19.1	23.6	18.2	15.5	0.0	1.2
	COL PCT	1.0	0.0	1.2	1.3	0.7	2.2	1.8	0.0	
	TOT PCT	0.0	0.0	0.3	0.2	0.3	0.2	0.2	0.0	
5	COUNT	5	0	60	51	91	49	24	0	280
	ROW PCT	1.8	0.0	21.4	18.2	32.5	17.5	8.6	0.0	3.0
	COL PCT	5.1	0.0	2.8	3.0	2.5	5.3	2.6	0.0	
	TOT PCT	0.1	0.0	0.6	0.5	1.0	0.5	0.3	0.0	
6	COUNT	1	0	72	57	113	16	15	0	274
	ROW PCT	0.4	0.0	26.3	20.8	41.2	5.8	5.5	0.0	2.9
	COL PCT	1.0	0.0	3.4	3.4	3.1	1.7	1.6	0.0	
	TOT PCT	0.0	0.0	0.8	0.6	1.2	0.2	0.2	0.0	
COLUMN TOTAL		99	26	2127	1674	3623	930	919	17	9415
		1.1	0.3	22.6	17.8	38.5	9.9	9.8	0.2	100.0

(CONTINUED)

SAMPLE COMPUTER OUT-PUT

Figure 3

TABLE 1

SOUTHERN CONNECTICUT LIBRARY COUNCIL
REFERENCE USE SURVEY 1972
SUMMARY OF DATA

REFERENCE ACTIVITY DURING 4 SURVEY WEEKS

	NO. OF INQUIRIES	% OF PUBLIC LIB.	% OF ALL
ANSONIA	130	1.5 %	1.1 %
BRANFORD	339	3.8	2.9
CHESHIRE	432	4.8 %	3.7 %
DERBY	110	1.2	0.9
EAST HAVEN	280	3.1 %	2.4 %
GUILFORD	274	3.1	2.4
HAMDEN	1139	12.7 %	9.9 %
MADISON	437	4.9	3.8
MILFORD	713	7.9 %	6.2 %
NEW HAVEN	2633	29.0	23.0
NORTH BRANFORD	197	2.2 %	1.7 %
NORTH HAVEN	153	1.7	1.3
ORANGE	308	3.4 %	2.7 %
SEYMOUR	81	0.9	0.7
SHELTON	213	2.4 %	1.8 %
WALLINGFORD	583	6.5	5.0
WEST HAVEN	782	8.7 %	6.8 %
WOODBRIDGE	183	2.0	1.6
SUB-TOTAL PUBLIC LIB.	8087		
SCHOOLS			
HOPKINS	22		0.2 %
SCSC	66		0.6
U of NH	156		1.4 %
QUINNIPIAC COLL.	963		8.3
YALE UNIV.	1330		11.5 %
SUB-TOTAL SCHOOLS	2537		
REGION'S GRAND TOTAL	11,524		

BEST COPY AVAILABLE

TOTAL REFERENCE USE PER 10,000 TOWN POPULATION

REFERENCE USE SURVEY 1972

ANSONIA	51.5
SEYMOUR	65.4
NORTH HAVEN	69
SHELTON	78.5
DERBY	87.5
EAST HAVEN	111
MILFORD	141
WEST HAVEN	148
WALLINGFORD	163
BRANFORD	165
NORTH BRANFORD	183
NEW HAVEN	191
CHESHIRE	226
ORANGE	227
GUILFORD	228
HAMDEN	231
WOODBRIDGE	238
MADISON	447

Table 3

SOUTHERN CONN. LIBRARY COUNCIL
REFERENCE USE SURVEY 1972
SUMMARY OF DATA

SUMMARY OF NON-RESIDENT USE OF REFERENCE SERVICES IN EACH TOWN'S LIBRARY DURING 4 SURVEY WEEKS

EAST HAVEN	1.4 %
NORTH BRANFORD	2.0
WOODBRIDGE	2.2 %
WALLINGFORD	2.6
MADISON	3.2 %
ORANGE	3.6
CHESHIRE	5.3 %
MILFORD	5.6
WEST HAVEN	5.8 %
SHELTON	9.4
GUILFORD	10.6 %
HAMDEN	10.8
SEYMOUR	12.3 %
NORTH HAVEN	13.7
BRANFORD	14.2 %
ANSONIA	14.6
NEW HAVEN	24.2 %
DERBY	49.1

Table 4

IN-PERSON REFERENCE USE

The town libraries (below) are used for in-person reference inquiries by residents of the towns (across) in the indicated amounts(%).

	RESIDENT OF...				
	ANSONIA	DERBY	SEYMOUR	SHELTON	
ANSONIA LIBRY.	88%	8%	2%	2%	= 100%
DERBY LIBRY.	14.3%	67.9%	5.4%	12.5%	= 100%
SEYMOUR LIBRY.	3.2%	1.6%	88.7%	0	= 100%
SHELTON LIBRY.	1.9%	3.8%	0	92.5%	= 100%

For example, 14.3% of in-person reference use of Derby's library is by Ansonia residents coming to the library.

****

TELEPHONE REFERENCE USE

The town libraries (below) receive telephone reference inquiries from the residents of the towns (across) in the indicated amounts.

	RESIDENTS OF...				
	ANSONIA	DERBY	SEYMOUR	SHELTON	
ANSONIA LIBRY.	83.8%	7.5%	3.8%	1.3%	= 100%
DERBY LIBRY.	18.9%	34%	13.2%	24.5%	= 100%
SEYMOUR LIBRY.	11.8%	0	82.4%	0	= 100%
SHELTON LIBRY.	11.3%	3.8%	0	84.9%	= 100%

For example, 11.3% of telephone reference done at the Shelton (Plumb) library is for Ansonia residents.

THE PUBLIC LIBRARIES IN THE TOWNS BELOW WERE USED BY... (%)

...RESIDENTS OF THESE TOWNS FOR IN-PERSON REFERENCE SERVICE

	Not Indicated	Ansonia	Branford	Cheshire	Derby	E. Haven	Guilf'd	Hamden	Madison	Milford	New H'vn.	N. Bfd.	N. H'vn.	Orange	Seymour	Shelton	Wlingf'd	W. H'vn.	Wbr'ge.	Other	(count)
Ansonia		88			8										2	2					= 100% (50)
Branford			91.2			1.6	2	0.4	1.6		1.6	0.4		0.4						0.8	= 100% (251)
Cheshire	0.9			98.3				0.3												0.6	= 100% (347)
Derby		14.3			67.9										5.4	12.5					= 100% (56)
East Haven			0.4			98.4					0.4					0.4				0.4	= 100% (248)
Guilford	0.4		1.3				89.8		2.5	0.4	1.3						0.8			3.4	= 100% (236)
Hamden	0.3	0.1		0.3		0.1	0.9	90.9	0.1	0.1	1.1	0.1	4.6	0.1	0.1		0.3	0.2		0.4	= 100% (890)
Madison							0.8		97.9											1.3	= 100% (386)
Milford	0.4	0.4			0.2			0.2	0.4	94.4	0.5			1.3	0.2			0.5		1.6	= 100% (558)
New Haven	0.5	0.1	0.7	0.4	0.1	1.2	0.4	3.0	0.1	0.7	83.7	0.1	2.0	1.2	0.2	0.1	0.7	2.1	0.9	1.7	= 100% (1738)
No. Branford	0.6						0.6					98.3						0.6			= 100% (175)
No. Haven			0.8					1.7			0.8	8.3	88.4								= 100% (121)
Orange		0.8			0.4					0.8				98.1							= 100% (263)
Seymour		3.2			1.6						1.6				88.7					4.8	= 100% (62)
Shelton	0.6	1.9			3.8											92.5				1.3	= 100% (159)
Wallingford	0.2												0.4				98.3	0.2		0.8	= 100% (472)
West Haven						0.2		0.5		0.3	0.8			0.5			0.5	96.3	0.5	0.6	= 100% (640)
Woodbridge	0.6																	0.6	97.5	1.3	= 100% (160)

TABLE 5A

THE PUBLIC LIBRARIES IN THE TOWNS BELOW WERE USED BY... (%)

...RESIDENTS OF THESE TOWNS FOR TELEPHONE REFERENCE SERVICE

	Not Indicated	Ansonia	Branford	Cheshire	Derby	E. Haven	Guilf'd	Hamden	Madison	Milford	New H'vn	N. Bfd.	N. H'vn.	Orange	Seymour	Shelton	Wllngf'd	W. H'vn.	Wbr'ge.	Other	(count)
Ansonia		83.8			7.5						2.5				3.8	1.3				1.3	= 100% (80)
Branford			74.7			1.2	1.2		2.4		7.2	2.4			1.2					9.6	= 100% (83)
Cheshire	2.5			81.5				6.2									6.2			3.7	= 100% (81)
Derby		18.9			34			1.9			1.9				13.2	24.5				5.7	= 100% (53)
East Haven						100															= 100% (31)
Guilford	3.0						84.8		6.1											6.1	= 100% (33)
Hamden				1.7			0.4	84.7			2.9	0.8	5.4				0.8			3.3	= 100% (242)
Madison	2.0								88		2.0									8	= 100% (50)
Milford	1.3									94										4.6	= 100% (151)
New Haven	0.8		1.4	1.1		1.9	0.4	10.1	0.6	1.4	60.4	1.5	3.9	2.2	0.1		1.9	6.4	1.1	5.0	= 100% (855)
No. Branford											4.5	95.5									= 100% (22)
No. Haven								9.7			3.2	6.5	80.6								= 100% (31)
Orange	4.8		2.4								2.4			88.1						2.4	= 100% (42)
Seymour		11.8													82.4					5.9	= 100% (17)
Shelton		11.3			3.8											84.9					= 100% (53)
Wallingford											1.9						96.2			1.9	= 100% (104)
West Haven									4.2		6.3			0.7	1.4			85.2	0.7	1.4	= 100% (142)
Woodbridge																			100		= 100% (22)

TABLE 55

Table 6

TIMES OF HEAVIEST ACTIVITY
AS % OF THE TOTAL

DAY OF WEEK	TIME OF DAY	% OF TOTAL	CUMULATIVE %
Monday	2-5 PM	9%	9%
Wednesday	2-5 PM	7.7%	16.7%
Tuesday	2-5 PM	7.4%	24.1%
Thursday	2-5 PM	6.2%	30.3%
Monday	9-12 NOON	5.4%	35.7%
Friday	2-5 PM	5.1%	40.8%
Monday	12-2 PM	4.1%	44.9%
Wednesday	9-12 NOON	4.1%	49%

CENTRAL REFERENCE SERVICE SCHEDULE FOR MAXIMUM VALUE TO THE REGION

Monday	9AM-5PM	8 hours
Tuesday	2-5 PM	3 hours
Wednesday	9-12 NOON 2-5 PM	6 hours
Thursday	2-5 PM	3 hours
Friday	2-5 PM	3 hours
		23 hours TOTAL

PATRON AFFILIATION

Figure 4

TABLE 7

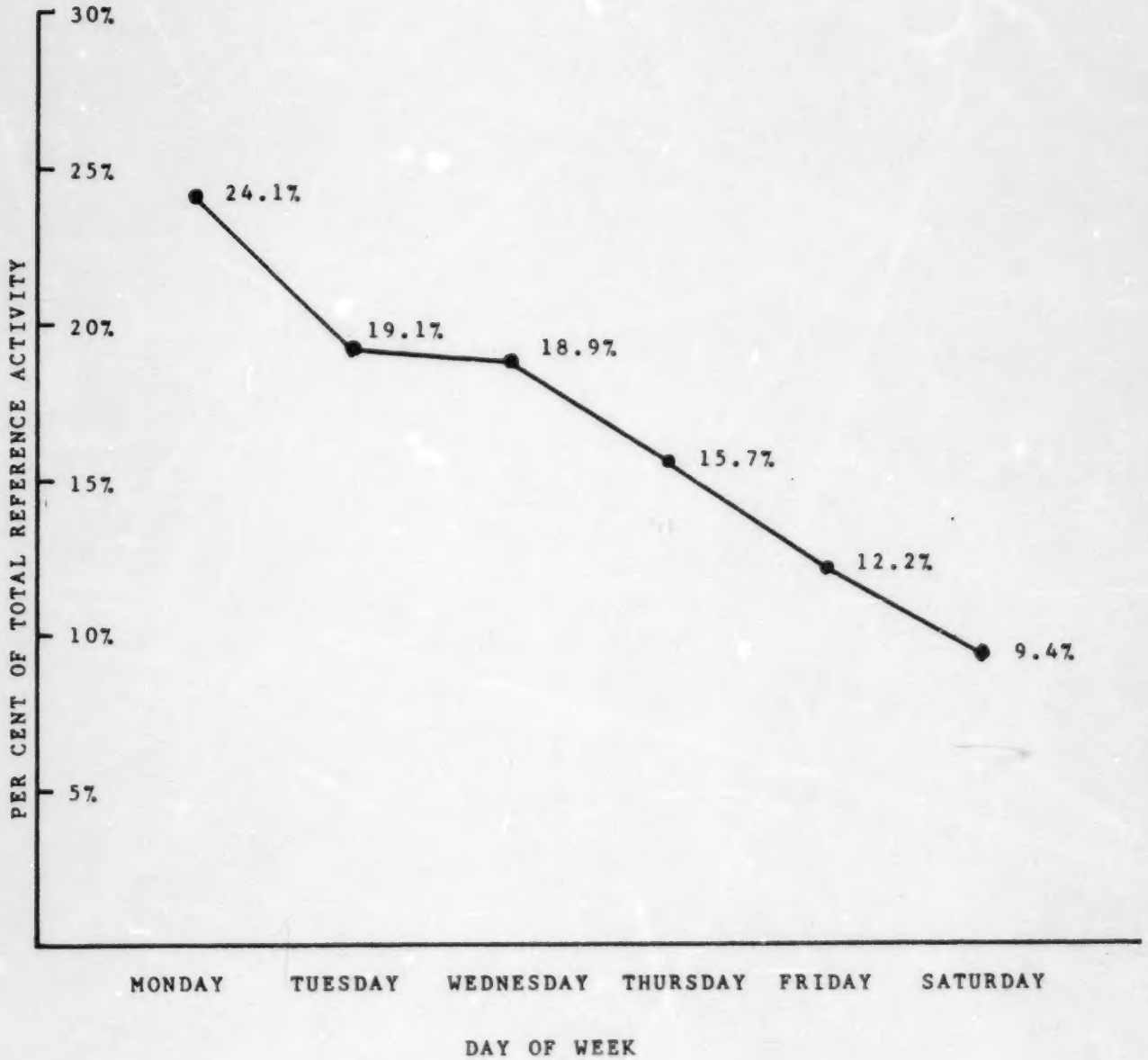
SOUTHERN CONN. LIBRARY COUNCIL
REFERENCE USE SURVEY 1972
SUMMARY OF DATA

MODE OF INQUIRY DURING 4 SURVEY WEEKS

	IN-PERSON	TELEPHONE	MAIL	NOT INDICATED
ANSONIA	38.5 %	61.5 %	0 %	0 %
BRANFORD	74.0	24.5	1.5	0
CHESHIRE	80.3 %	18.8 %	0 %	0.9 %
DERBY	50.9	48.2	0.9	0
EAST HAVEN	88.6 %	11.1 %	0 %	0.4 %
GUILFORD	86.1	12	0	1.8
HAMDEN	78.1 %	21.2 %	0.2 %	0.4 %
MADISON	88.3	11.4	0.2	0
MILFORD	78.3 %	21.2 %	0 %	0.6 %
NEW HAVEN	66.0	32.5	0.1	1.4
NORTH BRANFORD	88.8 %	11.2 %	0 %	0 %
NORTH HAVEN	79.1	20.3	0	0.7
ORANGE	85.4 %	13.6 %	0 %	1.0 %
SEYMOUR	76.5	21.0	0	2.5
SHELTON	74.6 %	24.9 %	0.5 %	0 %
WALLINGFORD	81	17.8	0.5	0.7
WEST HAVEN	81.8 %	18.2 %	0	0
WOODBRIDGE	87.4	12	0.5	0
REGION AS A WHOLE	76 % (7159)	23 % (2166)	0.2 % (18)	0.8 % (72)

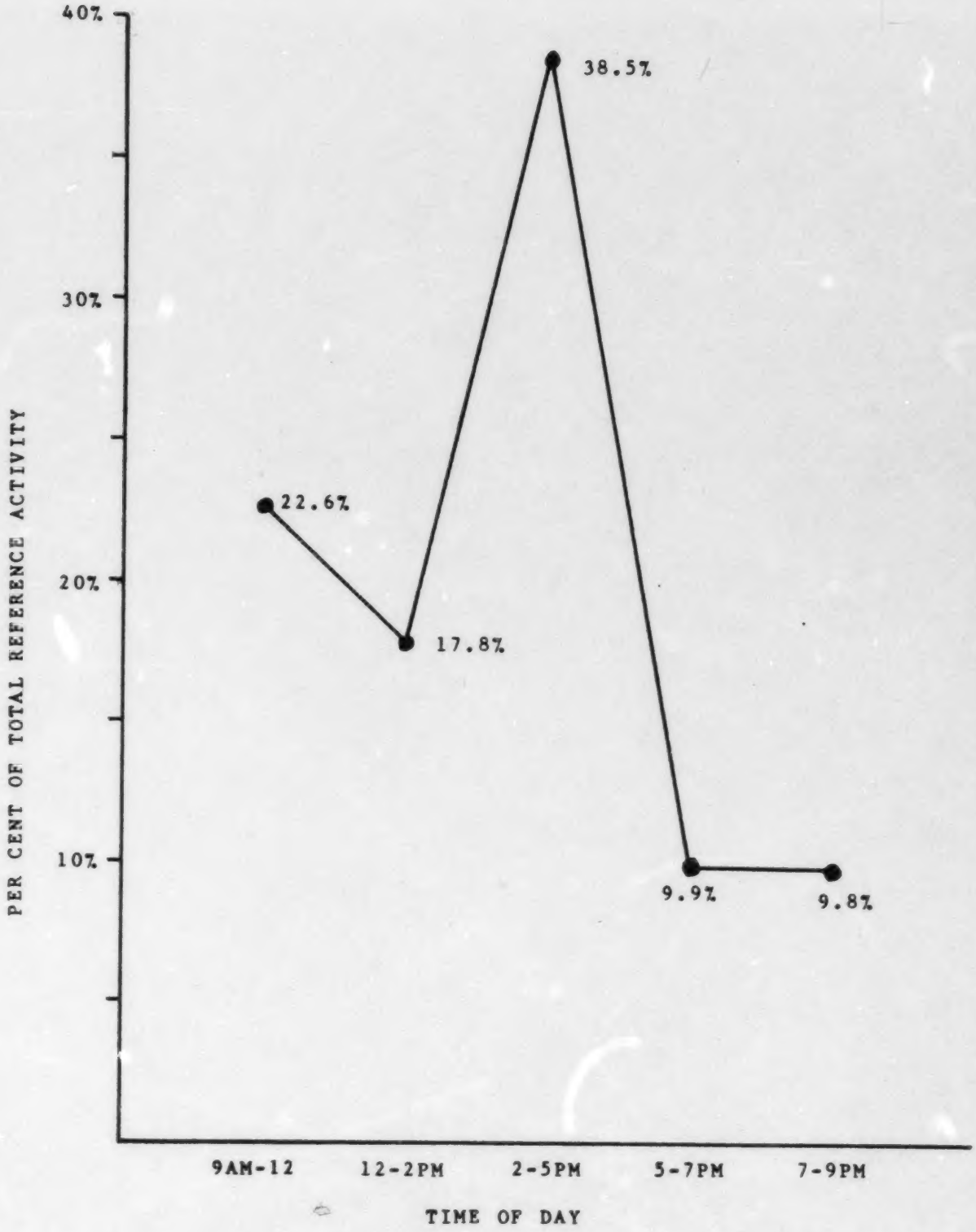
Figure 5

REFERENCE ACTIVITY FOR EACH DAY OF THE WEEK



REFERENCE ACTIVITY DURING THE DAY

Figure 6



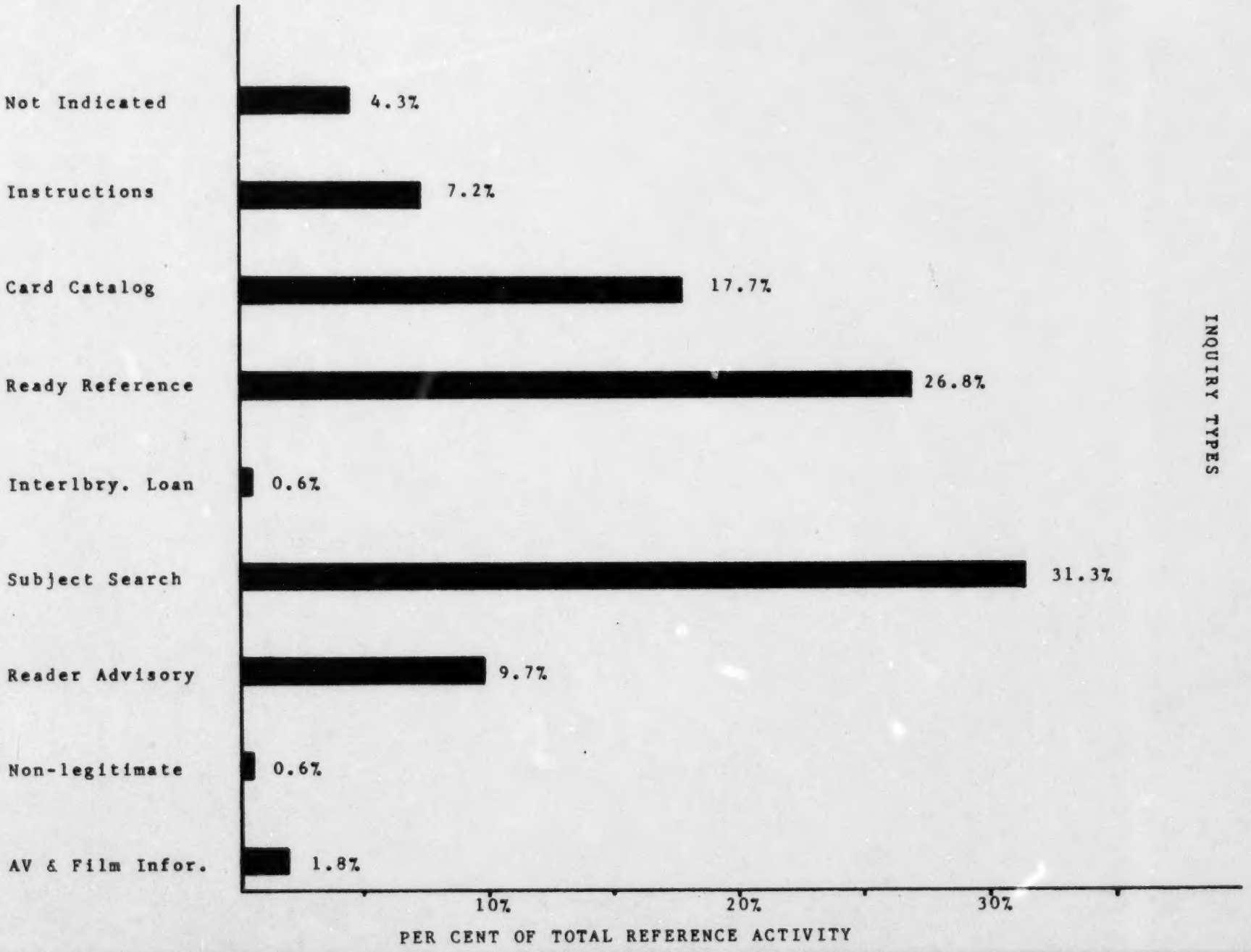
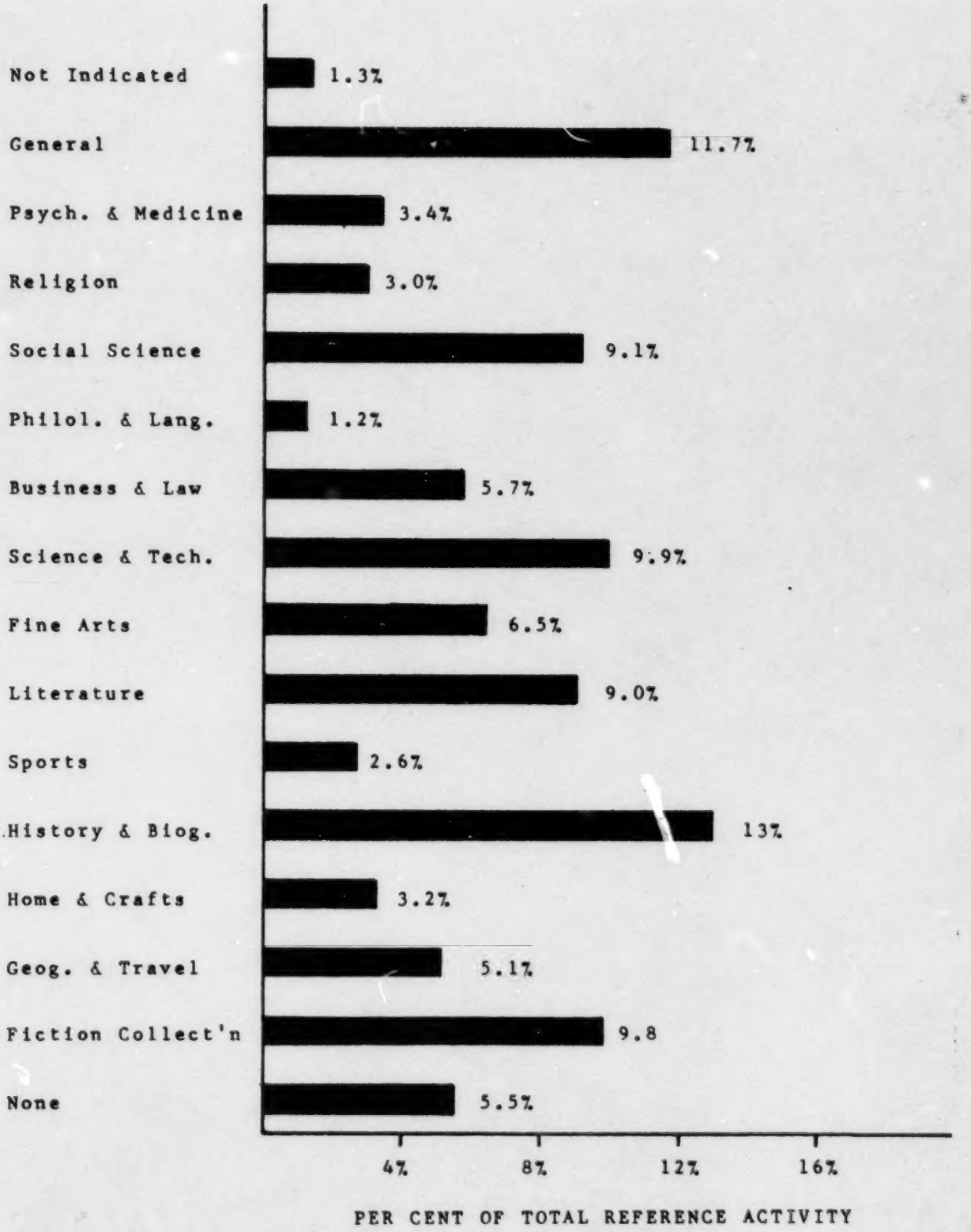

Not Indicated
4.3%
Instructions
7.2%
Card Catalog
17.7%
Ready Reference
26.8%
Interlbry. Loan
0.6%
Subject Search
31.3%
Reader Advisory
9.7%
Non-legitimate
0.6%
AV & Film Infor.
1.8%
10%
20%
30%
PER CENT OF TOTAL REFERENCE ACTIVITY
INQUIRY TYPES

Figure 7

SUBJECT OF INQUIRY

Figure 8



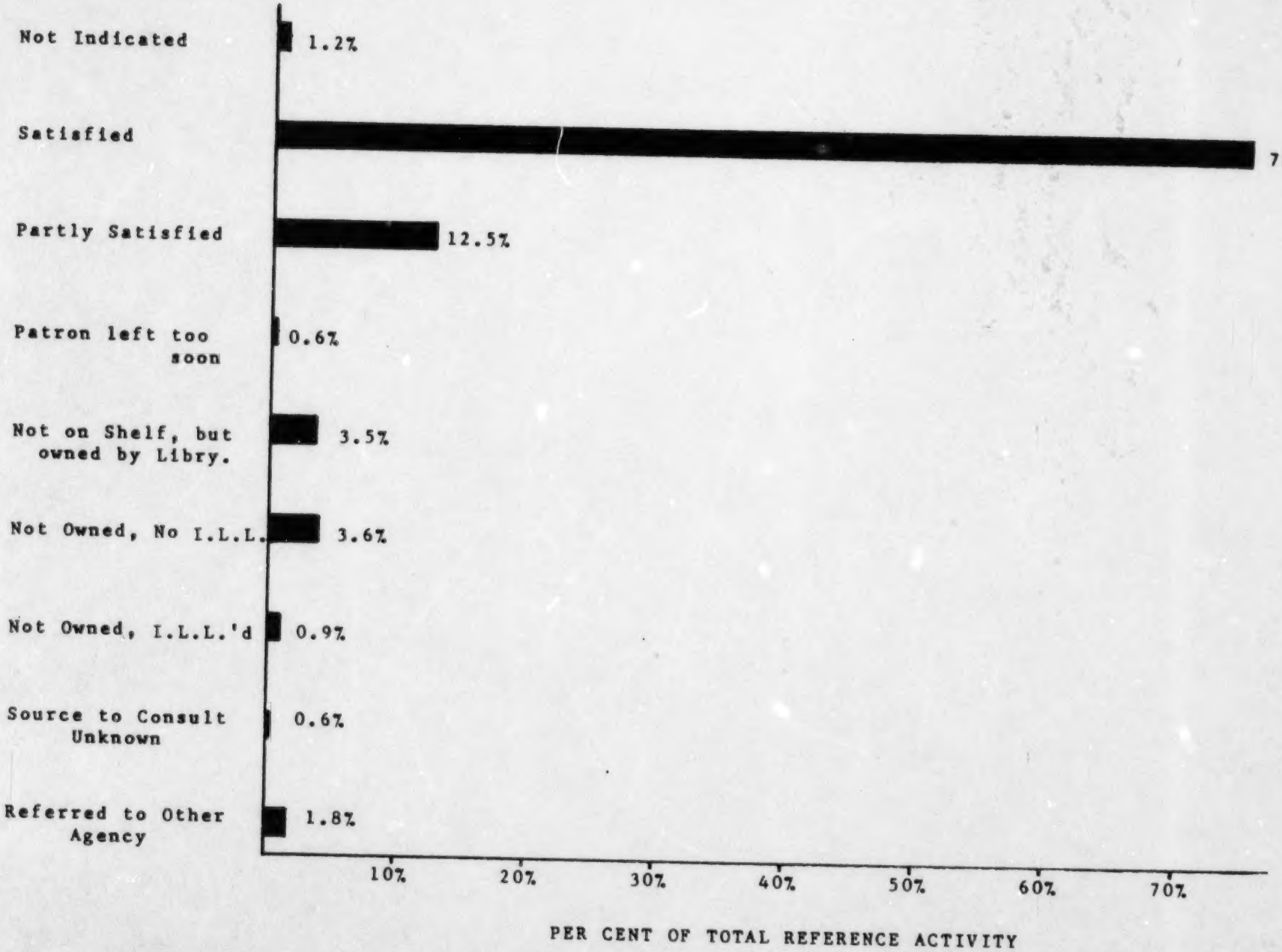

Not Indicated
1.2%
Satisfied
75.3%
Partly Satisfied
12.5%
Patron left too soon
0.6%
Not on Shelf, but owned by Libry.
3.5%
Not Owned, No I.L.L.
3.6%
Not Owned, I.L.L.'d
0.9%
Source to Consult Unknown
0.6%
Referred to Other Agency
1.8%
10%
20%
30%
40%
50%
60%
70%
PER CENT OF TOTAL REFERENCE ACTIVITY
RESULT OF INQUIRY

Figure 9

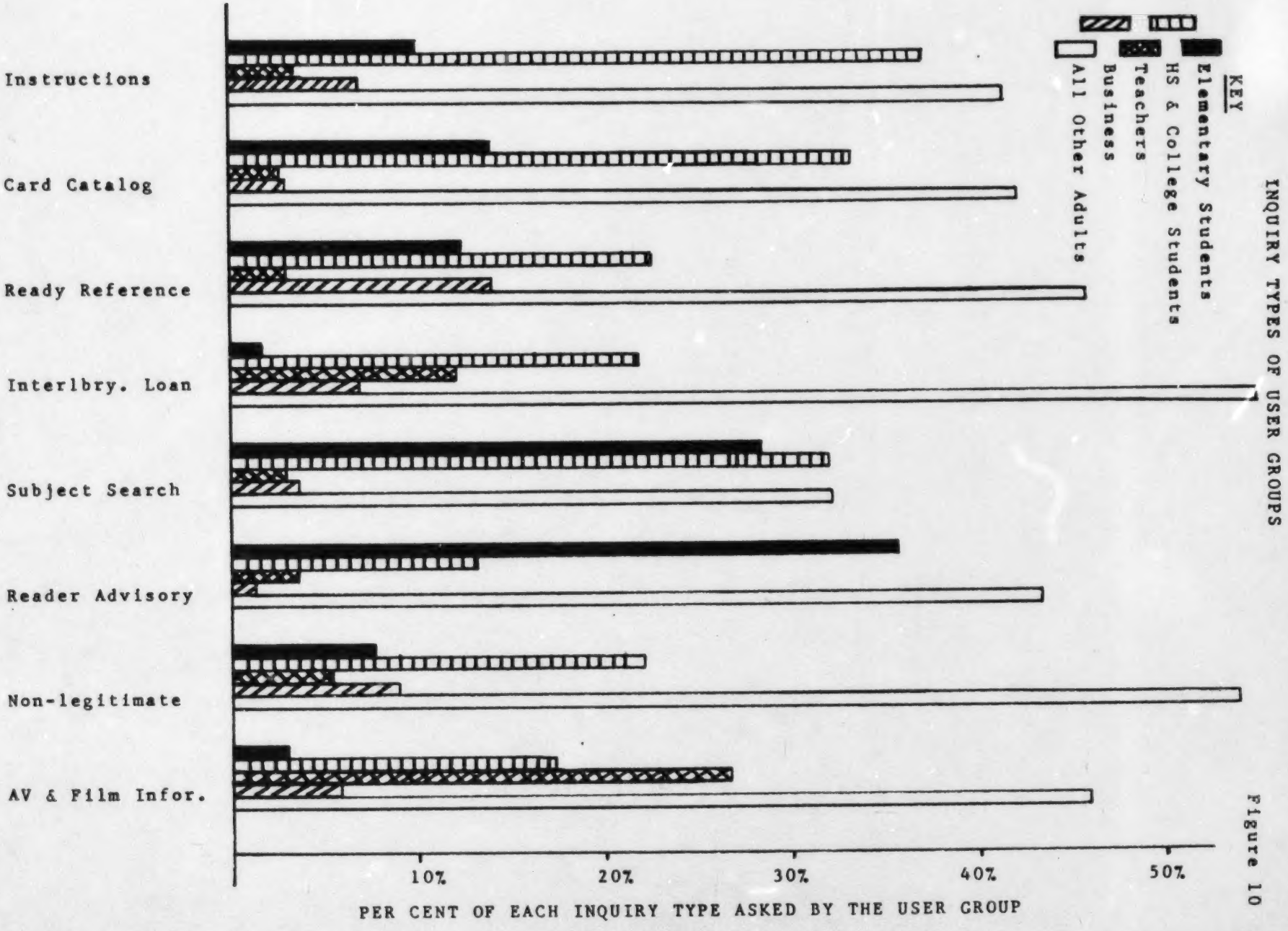
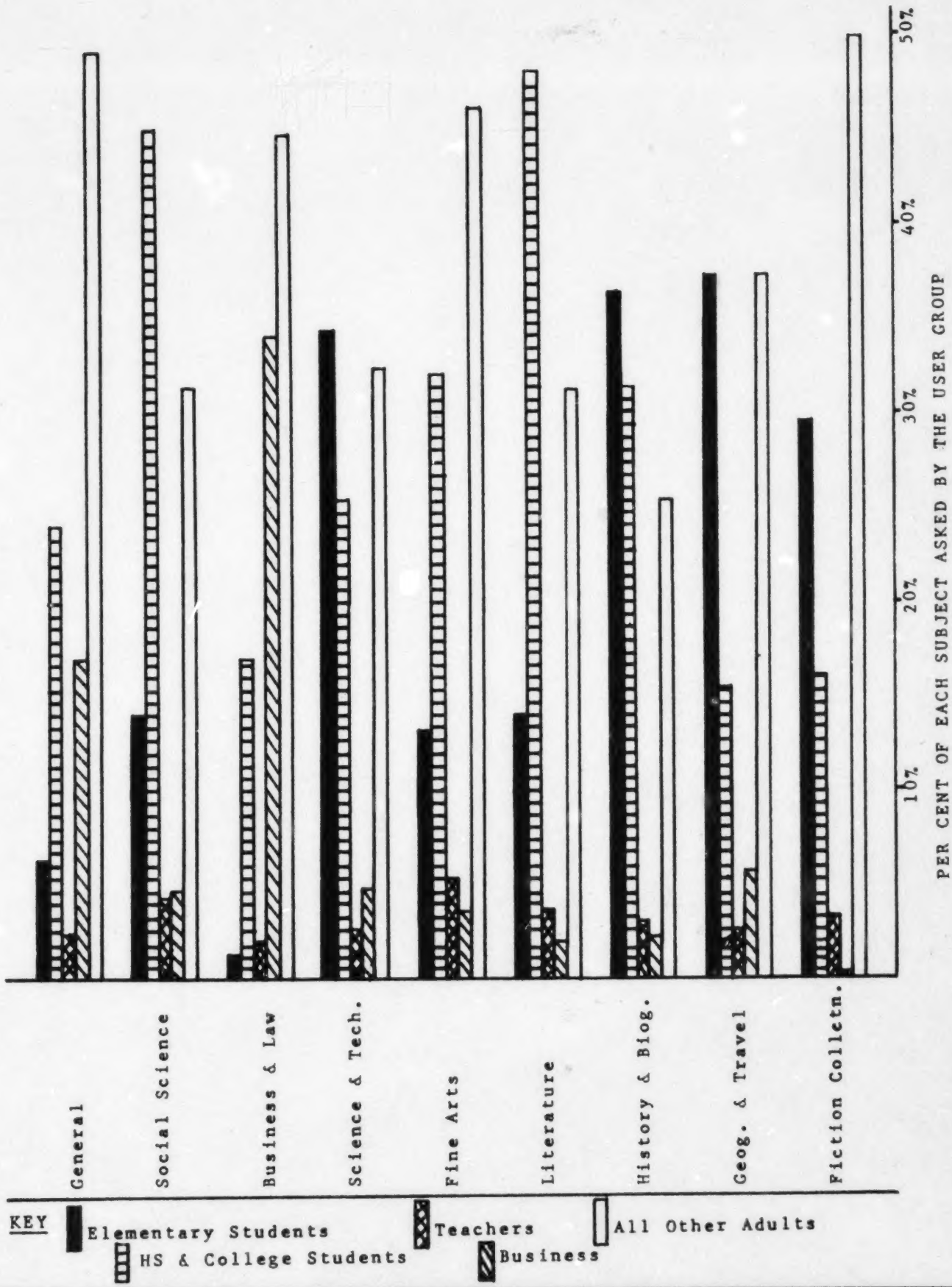

INQUIRY TYPES OF USER GROUPS
KEY
Elementary Students
HS & College Students
Teachers
Business
All Other Adults
Instructions
Card Catalog
Ready Reference
Interlbry. Loan
Subject Search
Reader Advisory
Non-legitimate
AV & Film Infor.
10%
20%
30%
40%
50%
PER CENT OF EACH INQUIRY TYPE ASKED BY THE USER GROUP

Figure 10

SUBJECT OF INQUIRIES BY USER GROUPS

Figure 11



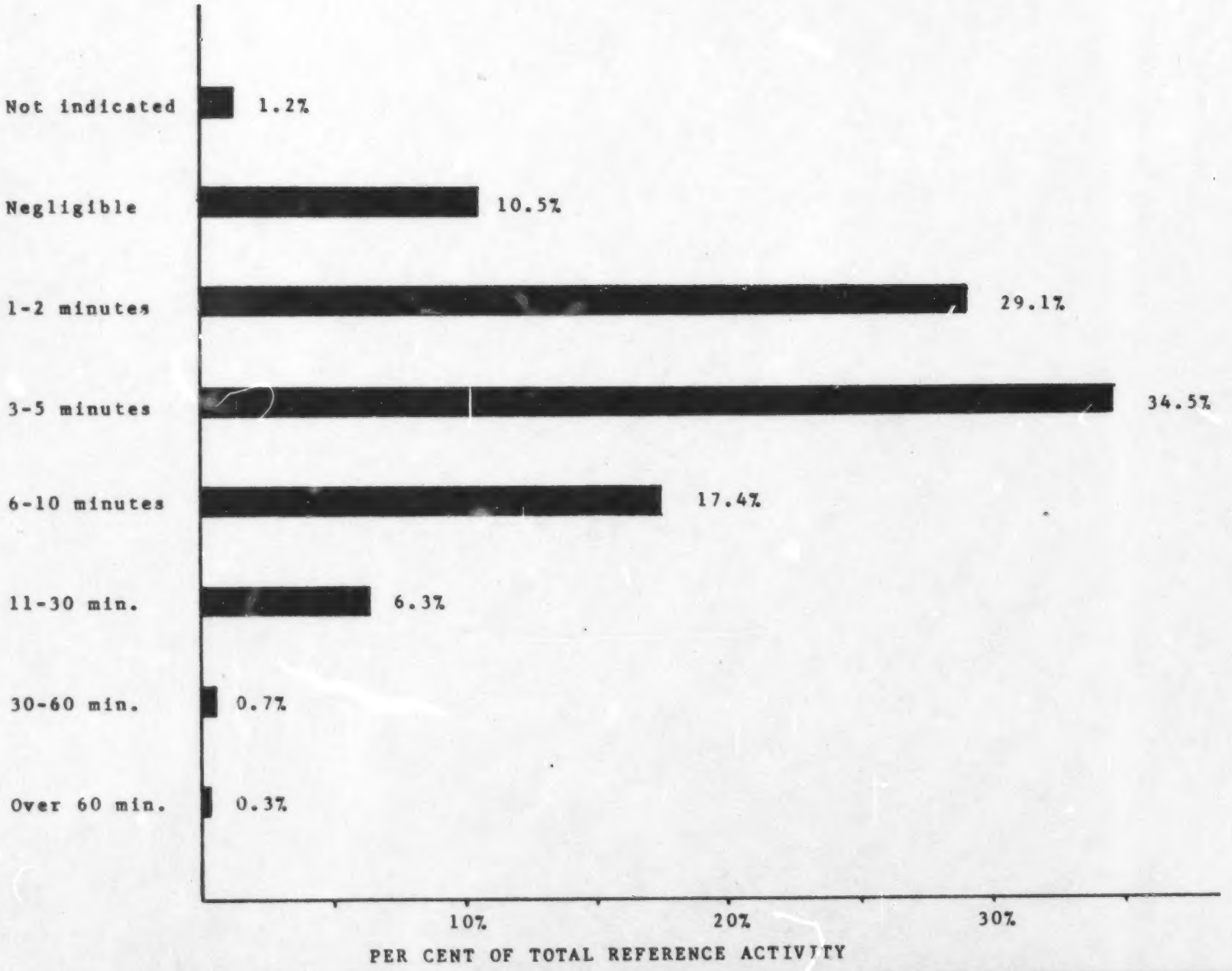

Not indicated
1.2%
Negligible
10.5%
1-2 minutes
29.1%
3-5 minutes
34.5%
6-10 minutes
17.4%
11-30 min.
6.3%
30-60 min.
0.7%
Over 60 min.
0.3%
10%
20%
30%
PER CENT OF TOTAL REFERENCE ACTIVITY
DURATION OF INQUIRY

Figure 12

MATERIALS CONSULTED

Figure 13